Name:

at1113exam: Expand, factor, and solve quadratics (v219)

1. Expand the following expression into standard form.

$$(9x - 2)(9x + 2)$$

$81x^2 + 18x - 18x - 4$

$81x^2 - 4$

2. Solve the equation.

$$(3x - 4)(5x - 2) = 0$$

$x = \frac{4}{3}$ $x = \frac{2}{5}$

3. Expand the following expression into standard form.

$$(9x + 7)(4x + 3)$$

$36x^2 + 27x + 28x + 21$

$36x^2 + 55x + 21$

4. Expand the following expression into standard form.

$$(8x - 9)^2$$

$64x^2 - 72x - 72x + 81$

$64x^2 - 144x + 81$

5. Solve the equation.

$$8x^2 - 23x + 12 \;=\; 3x^2 + 4x + 2$$

$$5x^2 - 27x + 10 = 0$$
$$(5x - 2)(x - 5) = 0$$
$$x = \frac{2}{5} \qquad x = 5$$

6. Factor the expression.

$$x^2 + x - 6$$

$$(x - 2)(x + 3)$$

7. Solve the equation with factoring by grouping.

$$18x^2 + 15x + 12x + 10 \;=\; 0$$

$$(3x + 2)(6x + 5) = 0$$
$$x = \frac{-2}{3} \qquad x = \frac{-5}{6}$$

8. Factor the expression.

$$49x^2 - 9$$

$$(7x + 3)(7x - 3)$$